**Reactivity of metals with acids**

**1)** Magnesium and copper are both metals used in the school laboratory. Elaborate on the reactivity of these

Two metals in hydrochloric acid, HCl.

In your answer you should:

• identify any observations you would make when each of magnesium and copper are added separately to

hydrochloric acid

• link each observation to the reactants and products involved in the reaction

• write a balanced symbol equation for any reaction that occurs.

You may refer to the activity series in the Resource Booklet.

**2)** Small pieces of zinc were dropped into a test tube of dilute sulfuric acid solution.

(a) Describe the observations you would make of this reaction.

(b) Compare and contrast the reaction of zinc in dilute sulfuric acid solution with the reaction of iron in dilute sulfuric acid solution.

In your answer include the relevant balanced symbol equations.

You may refer to the activity series in the resource booklet.

**3)** Write both the observations and balanced equations for the reactions of sulfuric acid, H2SO4, with a

cleaned piece of lead metal and with a cleaned piece of zinc metal.

You may refer to the Activity series in the Resource Booklet.

**4)** An investigation was carried out where identically sized pieces of the metals magnesium, zinc, and copper were placed in separate test tubes. The same volume and concentration of hydrochloric acid was added to each test tube.

(a) Describe the observations made during this investigation.

Magnesium and hydrochloric acid

Zinc and hydrochloric acid

Copper and hydrochloric acid

(b) Discuss the reactions that may occur with reference to the reactivity of the three metals. Include the balanced equations, where appropriate.

Refer to the activity series provided in the Resource Booklet.

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